B60K17/356

PATENT SPECIFICATION 791,903

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Date of filing Complete Specification : Nov. 7, 1955.

Application Date : Nov. 9, 1954. No. 32358/54.

Complete Specification Published : March 12, 1958.

Index at Acceptance :—Class 79(2), C4.

International Classification :—B62d.

COMPLETE SPECIFICATION.

Road Vehicle Power Transmission System.

We, THE ROVER COMPANY LIMITED, of Meteor Works, Lode Lane, Solihull, Birmingham, a British Company, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement :—

This invention has for its object to provide an improved power transmission system for a road vehicle.

A road vehicle provided with a power system in accordance with the invention includes an engine, a gearing driven by the engine for actuating one pair of ground wheels, a pump operable by power derived from the engine, hydraulic motors supplied by the pump for actuating another pair of ground wheels, and a driver-operable valve or valves for controlling the action of the hydraulic motors.

In the accompanying drawings, Figures 1 and 2 respectively illustrate in diagrammatic form two typical embodiments of the invention.

Referring to Figure 1, the rear pair of ground wheels *a* are operable directly by the engine *b*, through a variable-speed gear box *c*, in the conventional manner. For driving the front pair of ground wheels *d*, each of these has combined with it a hydraulic motor *e* which is supplied with motive liquid by a pump *f* operable by power derived from the engine. Any convenient control valve *g* operable by the driver is provided for bringing the hydraulic motors into action when required. When this valve is closed the liquid from the pump is caused to circulate idly by way of a by-pass pipe *h*.

Preferably the liquid supply and return pipes between the pump and motors are interconnected by a pipe *i* which includes a non-return valve *j* and which enables a free-wheel effect to be obtained as, for example, when rounding a bend in the road.

In the example shown in Figure 2, the motors *e* are connected in parallel with the pump under the control of the driver-operable valves *g*, so that if either of the associated ground wheels has a bad adhesion on the ground the whole of the available torque can be exerted on the other wheel. Moreover, by providing by-pass valves *k* between the supply and return pipes, the motors can be made to serve as brakes. The valve *k* shown on the upper part of Figure 2 is in the braking position, and that in the lower part is in the normal driving position.

What we claim is :—

1. A road vehicle provided with a power system which includes an engine, a gearing driven by the engine for actuating one pair of ground wheels, a pump operable by power derived from the engine, hydraulic motors supplied by the pump for actuating another pair of ground wheels, and a driver-operable valve or valves for controlling the action of the hydraulic motors.

2. A road vehicle provided with a power transmission system substantially as described and as illustrated by Figure 1 or 2 of the accompanying drawings.

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[*Price 3s. 6d.*]

PROVISIONAL SPECIFICATION.

Road Vehicle Power Transmission System.

We, THE ROVER COMPANY LIMITED, of Meteor Works, Lode Lane, Solihull, Birmingham, a British Company, do hereby declare this invention to be described in the following statement :—

This invention has for its object to provide an improved power transmission system for a road vehicle.

A system in accordance with the invention includes an engine-driven mechanism for actuating one pair of ground wheels, and hydraulic motors supplied by a pump for actuating another pair, or pairs, of ground wheels.

In one example, the rear ground wheels are operable directly by the engine through a variable-speed gear box in the conventional manner. For driving the front ground wheels, or other additional ground wheels, each of these has combined with it a hydraulic motor which is supplied with motive liquid by a pump operable by power derived from the engine. Any convenient control valve is provided for bringing the hydraulic motors into action when required.

Preferably the liquid supply and return pipes between the pump and motors are interconnected by a non-return valve which enables a free-wheel effect to be obtained, so that the motor-driven wheels can over run the engine-driven wheels, but if they tended to run slower than the engine-driven wheels, the hydraulic driver would come into action.

Also by connecting the motors in parallel with the pump, a differential drive can be obtained between the motor driven wheels. Further by providing suitable restrictions in the pipes feeding the motors, it is possible to limit the differential action, so that if either of the associated ground wheels has a bad adhesion on the ground, practically the whole of the available torque can be exerted on the other wheel. Moreover by providing a restricted by-pass between the supply and return pipes the motors can be made to serve as brakes.

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Abingdon : Printed for Her Majesty's Stationery Office, by Burgess & Son (Abingdon), Ltd.—1958.
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2,
from which copies may be obtained.

791,903 COMPLETE SPECIFICATION

1 SHEET

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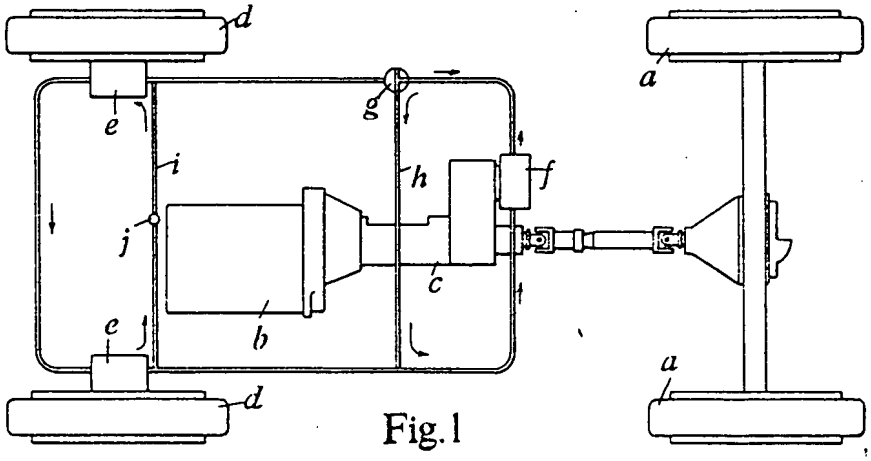

Fig.1

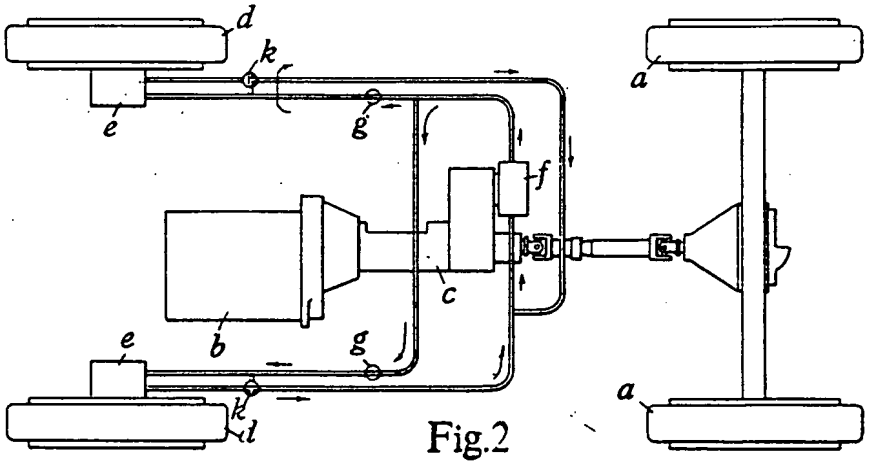

Fig.2